

## CLAIMS

What is claimed is:

1. An apparatus for precision frequency reference generation from CDMA pilot signals having a phase and a frequency, said apparatus comprising:

a receiver for receiving the CDMA pilot signals;  
a processor coupled to an output of the receiver; and  
an oscillator coupled to an output of the processor.

2. The apparatus of claim 1, further comprising a corrected frequency signal, a control signal, a timing signal, and a high stability oscillator signal, wherein the processor processes the phase and the frequency of the CDMA pilot signals with the corrected frequency signal to produce the control signal and the timing signal and the oscillator generates the corrected frequency signal by comparing the timing signal to the high stability oscillator signal generated by the oscillator.

3. The apparatus of claim 1, wherein the oscillator generates a corrected frequency signal by direct manipulation of a high stability oscillator through an electrical tuning input.

4. The apparatus of claim 1, wherein the oscillator generates a corrected frequency signal by direct digital frequency synthesis.

5. The apparatus of claim 1, wherein the oscillator generates the corrected frequency signal by full analog frequency synthesis.

6. The apparatus of claim 1, wherein the processor comprises:
- a low-pass filter for filtering the phase and the frequency and producing a filter signal; and
  - a lead-lag filter connected to the low-pass filter for filtering the filter signal to generate a control signal.

7. The apparatus of claim 6, wherein the oscillator generates a corrected frequency signal by direct manipulation of a high stability oscillator through an electrical tuning input.

8. The apparatus of claim 6, wherein the oscillator generates a corrected frequency signal by direct digital frequency synthesis.

9. The apparatus of claim 6, wherein the oscillator generates a corrected frequency signal by full analog frequency synthesis.